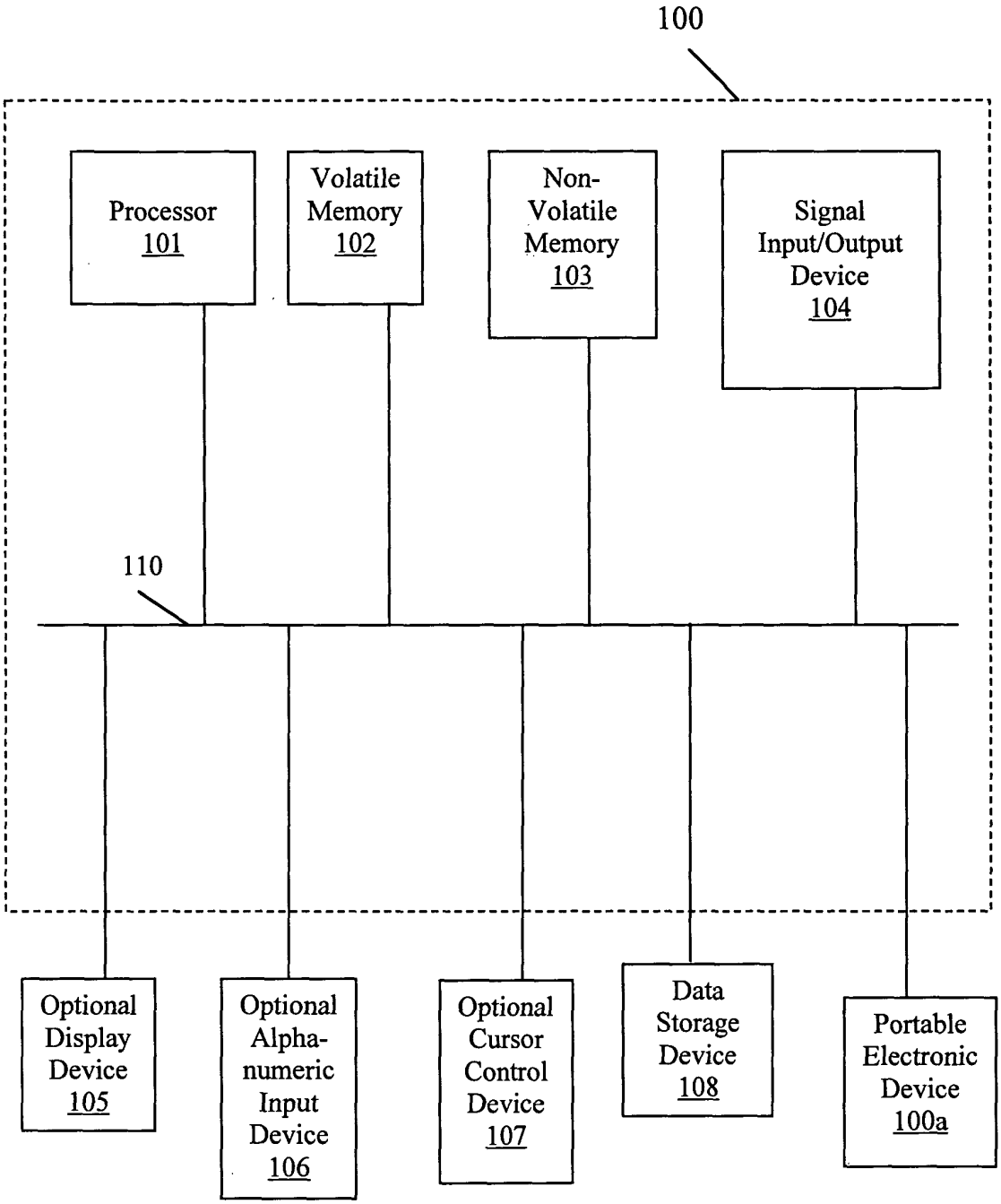
100
Processor
101
Volatile
Memory
102
Non-
Volatile
Memory
103
Signal
Input/Output
Device
104
110
Optional
Display
Device
105
Optional
Alpha-
numeric
Input
Device
106
Optional
Cursor
Control
Device
107
Data
Storage
Device
108
Portable
Electronic
Device
100a

FIGURE 1

200

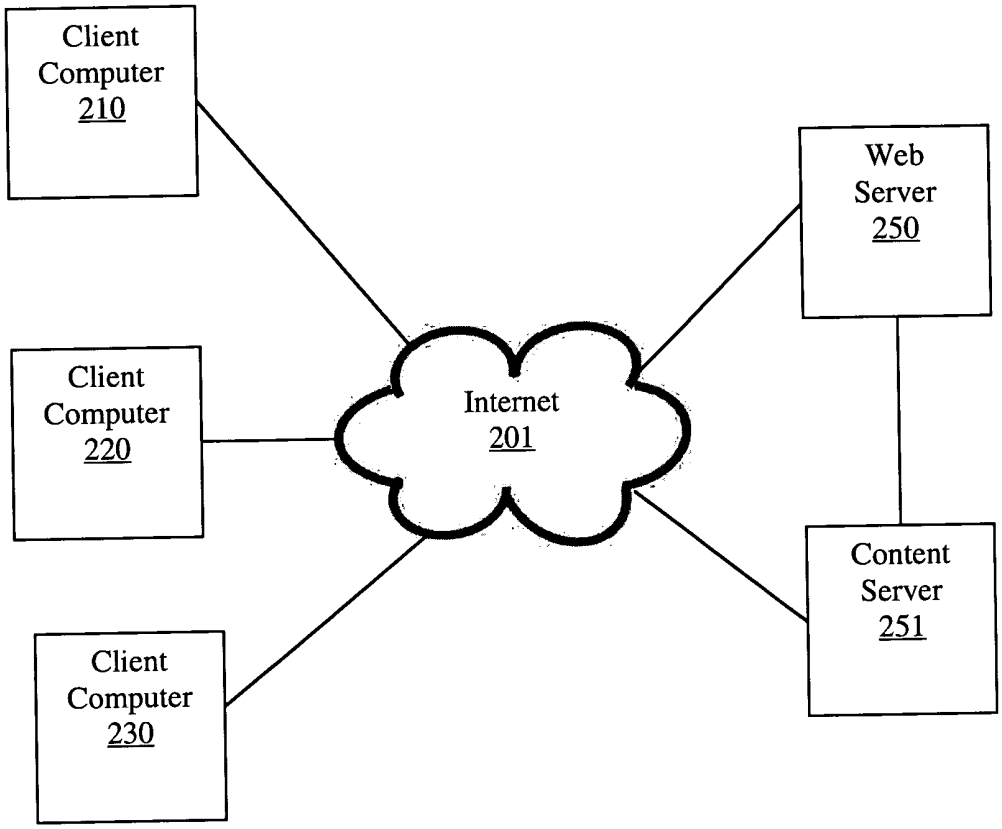
Client Computer 210
Client Computer 220
Client Computer 230
Internet 201
Web Server 250
Content Server 251

FIGURE 2

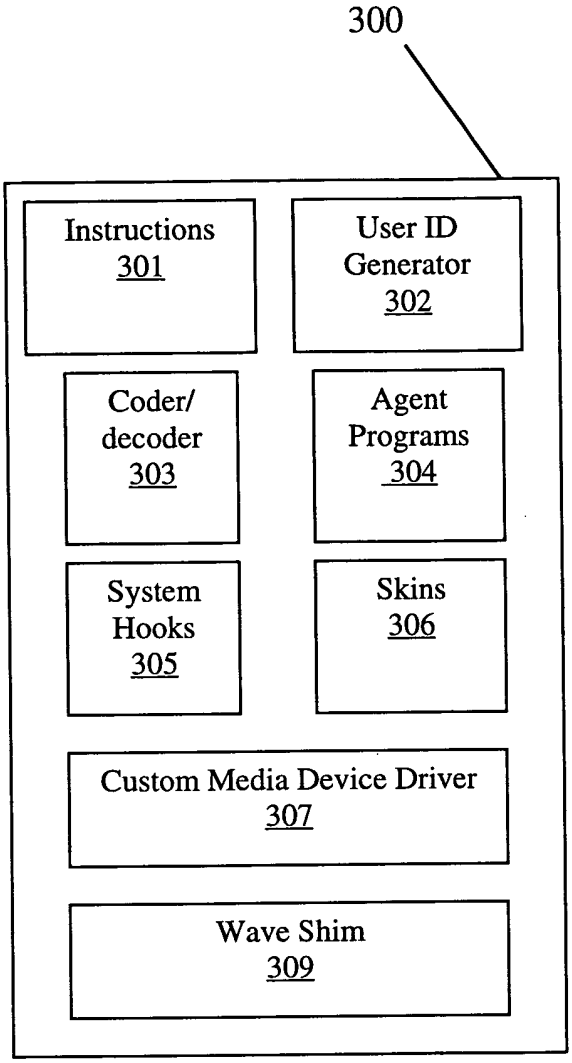
300
Instructions
301
User ID
Generator
302
Coder/
decoder
303
Agent
Programs
304
System
Hooks
305
Skins
306
Custom Media Device Driver
307
Wave Shim
309

FIGURE 3

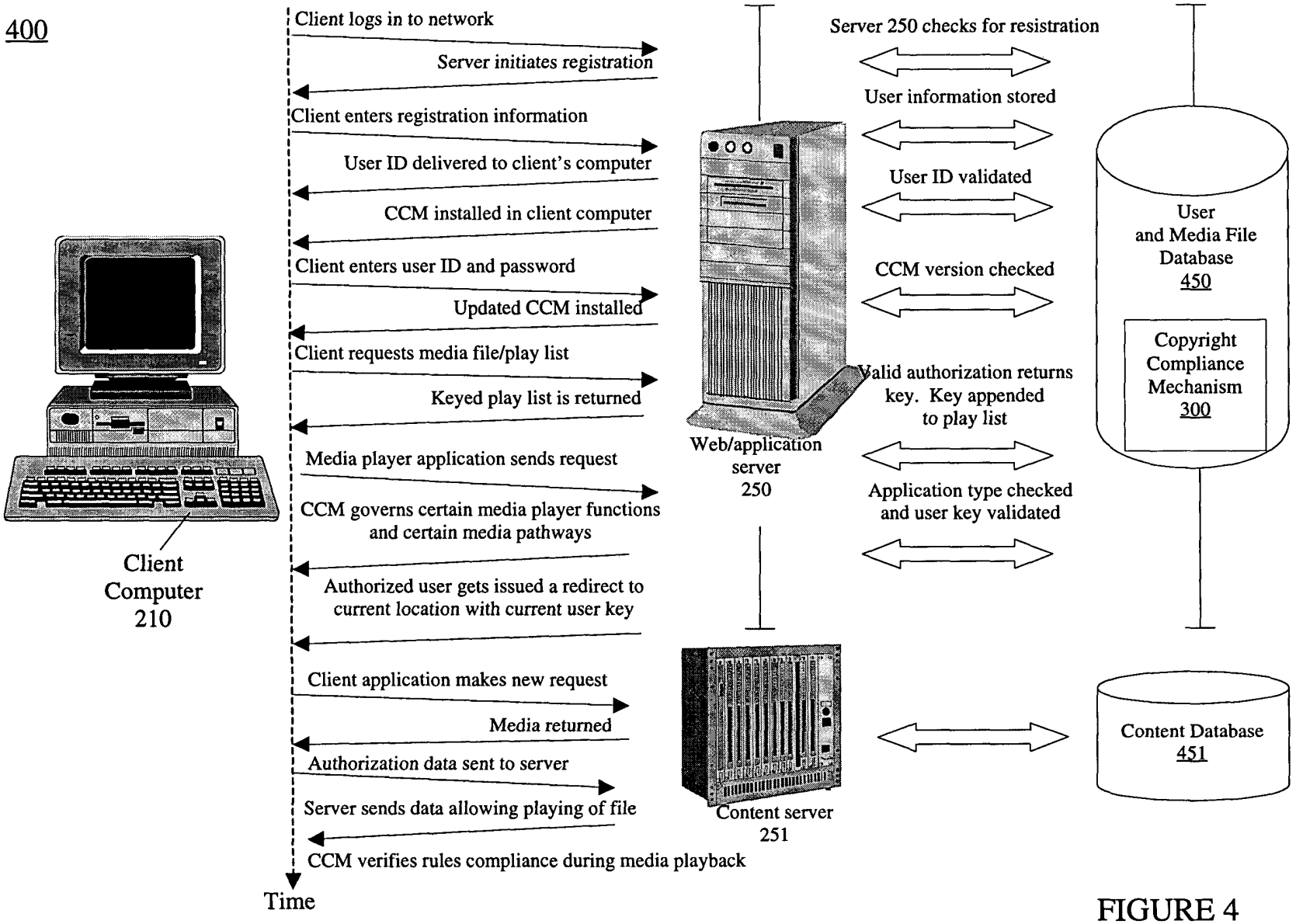
400
Client logs in to network
Server initiates registration
Client enters registration information
User ID delivered to client's computer
CCM installed in client computer
Client enters user ID and password
Updated CCM installed
Client requests media file/play list
Keyed play list is returned
Media player application sends request
CCM governs certain media player functions and certain media pathways
Authorized user gets issued a redirect to current location with current user key
Client application makes new request
Media returned
Authorization data sent to server
Server sends data allowing playing of file
CCM verifies rules compliance during media playback
Time
Client Computer 210
Web/application server 250
Content server 251
Server 250 checks for resistration
User information stored
User ID validated
CCM version checked
Valid authorization returns key. Key appended to play list
Application type checked and user key validated
User and Media File Database 450
Copyright Compliance Mechanism 300
Content Database 451

FIGURE 4

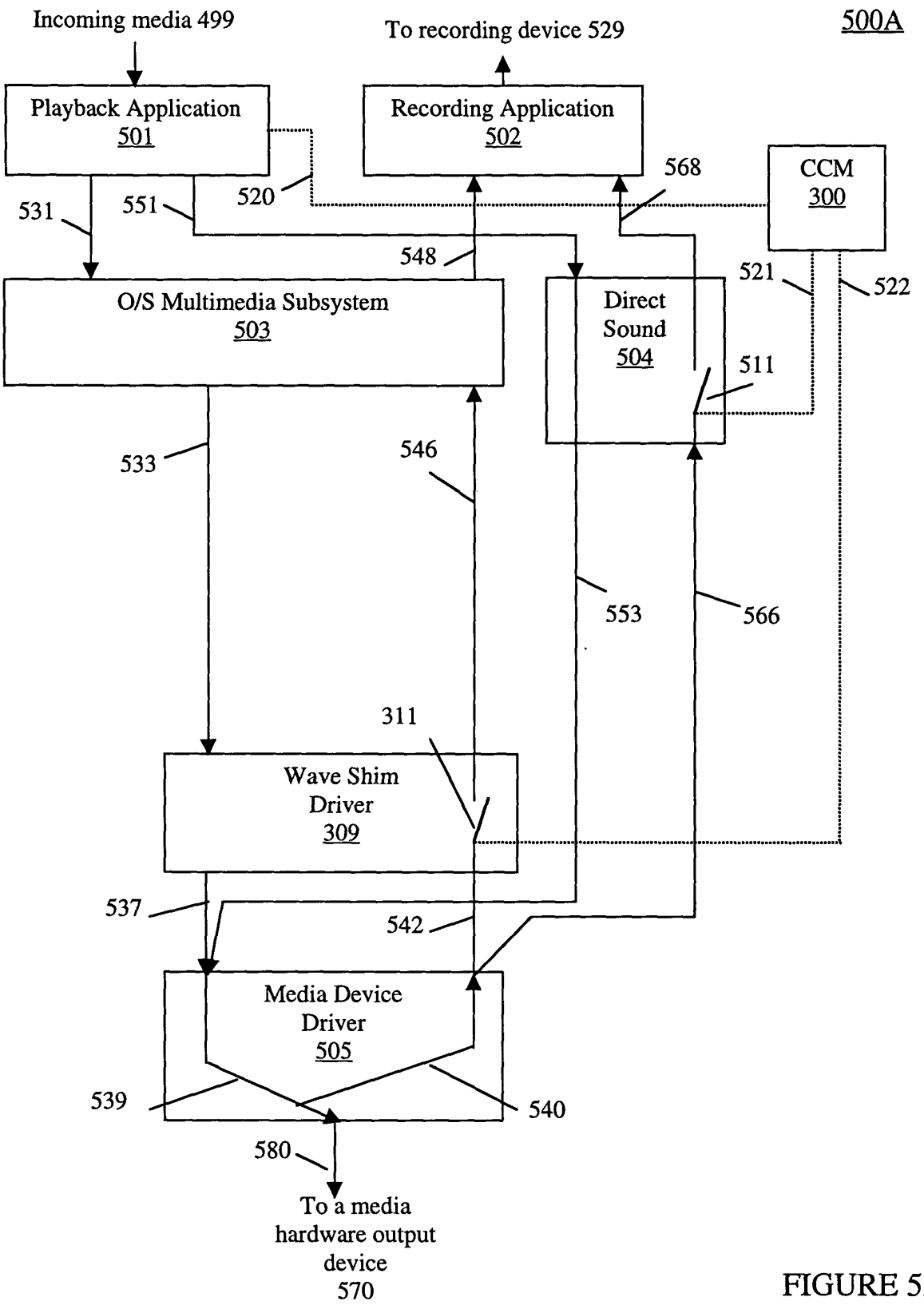
Incoming media 499
To recording device 529
500A
Playback Application
501
Recording Application
502
CCM
300
568
520
531
551
548
521
522
O/S Multimedia Subsystem
503
Direct
Sound
504
511
533
546
553
566
311
Wave Shim
Driver
309
537
542
Media Device
Driver
505
539
540
580
To a media
hardware output
device
570

FIGURE 5A

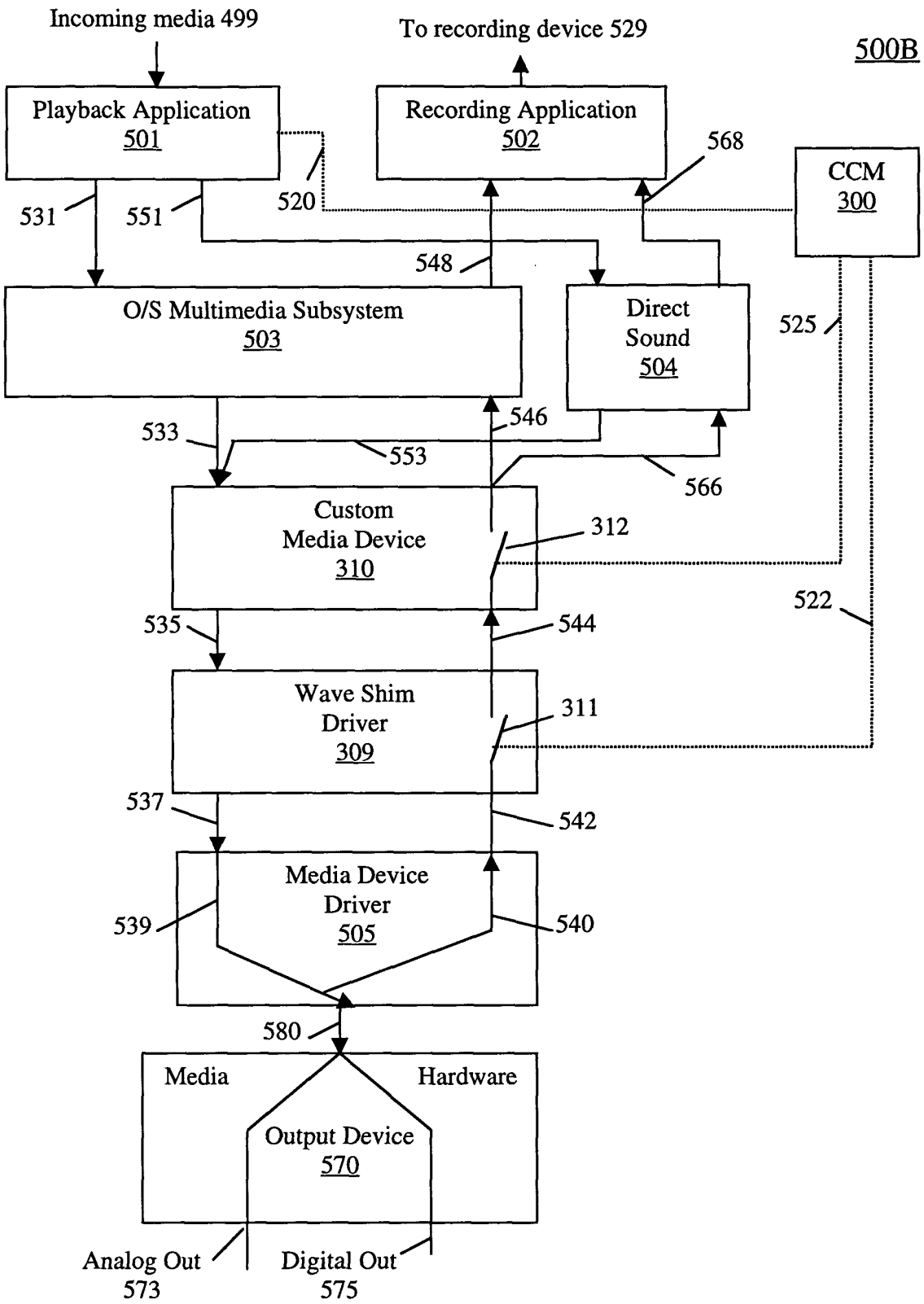
Incoming media 499
To recording device 529
500B
Playback Application
501
Recording Application
502
568
CCM
300
520
531
551
548
O/S Multimedia Subsystem
503
Direct
Sound
504
525
546
533
553
566
Custom
Media Device
310
312
522
535
544
Wave Shim
Driver
309
311
537
542
Media Device
Driver
505
539
540
580
Media
Hardware
Output Device
570
Analog Out
573
Digital Out
575

FIGURE 5B

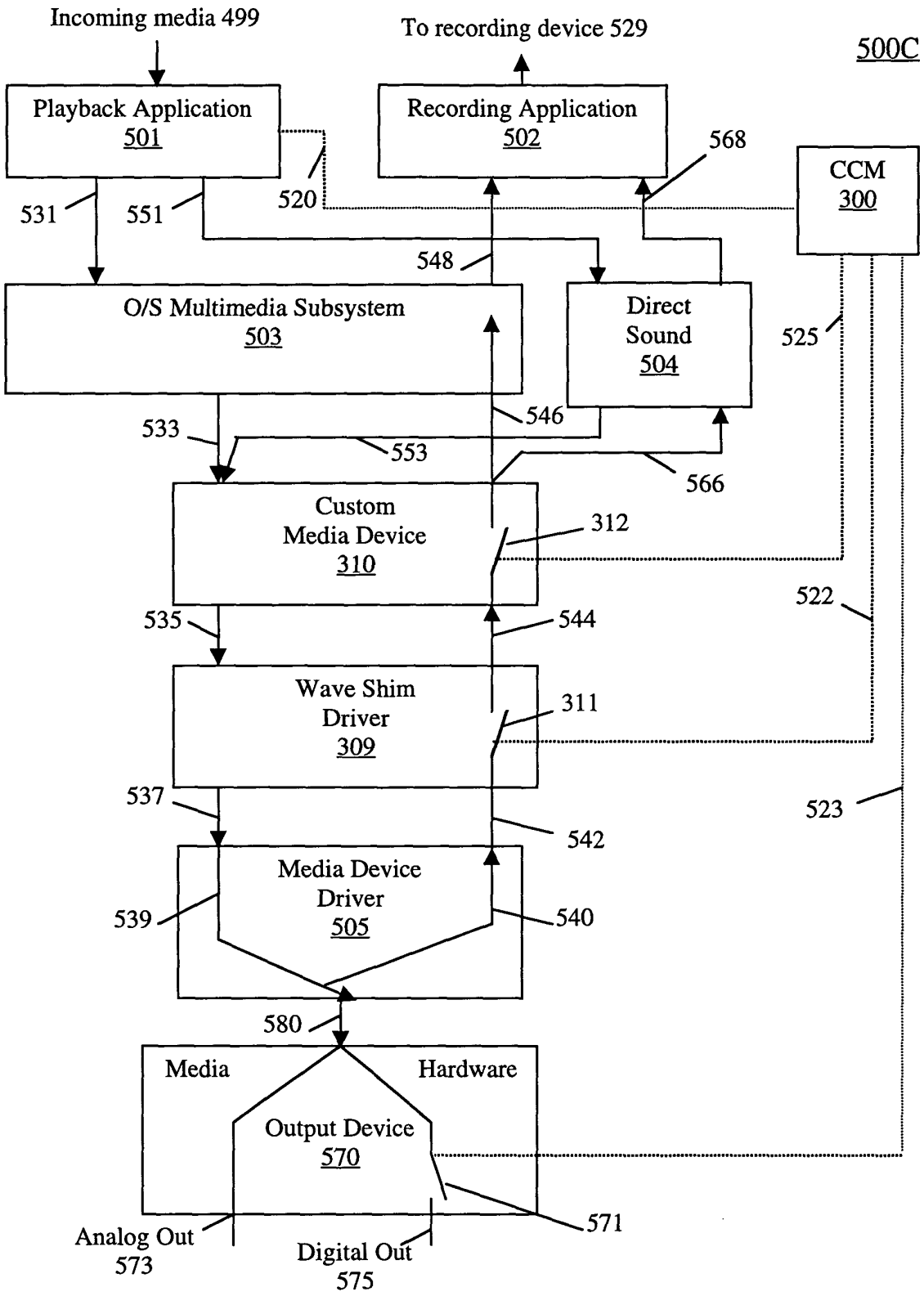
Incoming media 499
To recording device 529
500C
Playback Application
501
Recording Application
502
568
CCM
300
520
531
551
548
O/S Multimedia Subsystem
503
Direct
Sound
504
525
533
546
553
566
Custom
Media Device
310
312
522
535
544
Wave Shim
Driver
309
311
537
523
542
Media Device
Driver
505
539
540
580
Media
Hardware
Output Device
570
571
Analog Out
573
Digital Out
575

FIGURE 5C

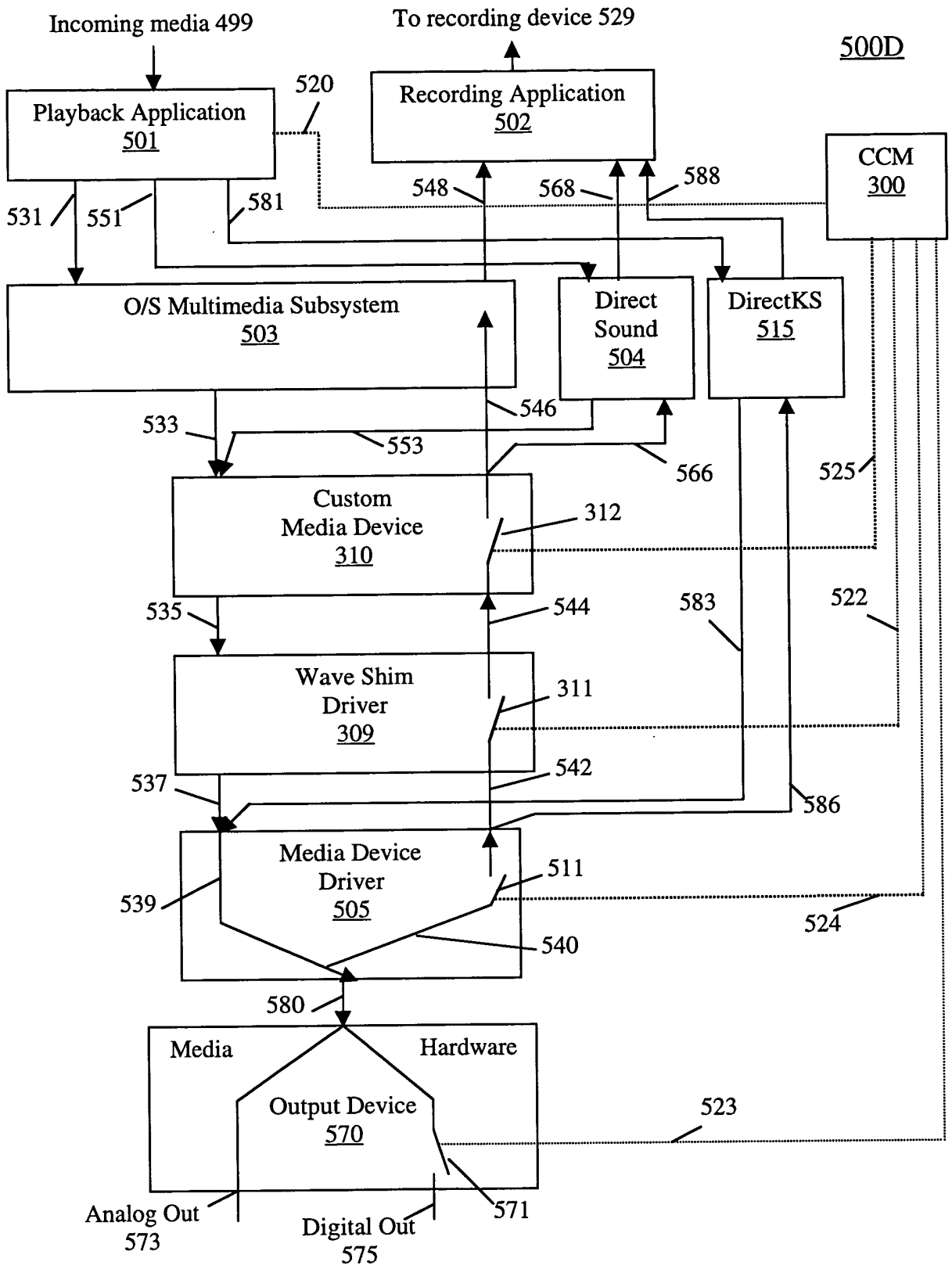
Incoming media 499
To recording device 529
500D
Playback Application
501
520
Recording Application
502
CCM
300
548
568
588
531
551
581
O/S Multimedia Subsystem
503
Direct
Sound
504
DirectKS
515
546
533
553
566
525
Custom
Media Device
310
312
535
544
583
522
Wave Shim
Driver
309
311
542
537
586
Media Device
Driver
505
511
539
524
540
580
Media
Hardware
Output Device
570
523
571
Analog Out
573
Digital Out
575

FIGURE 5D

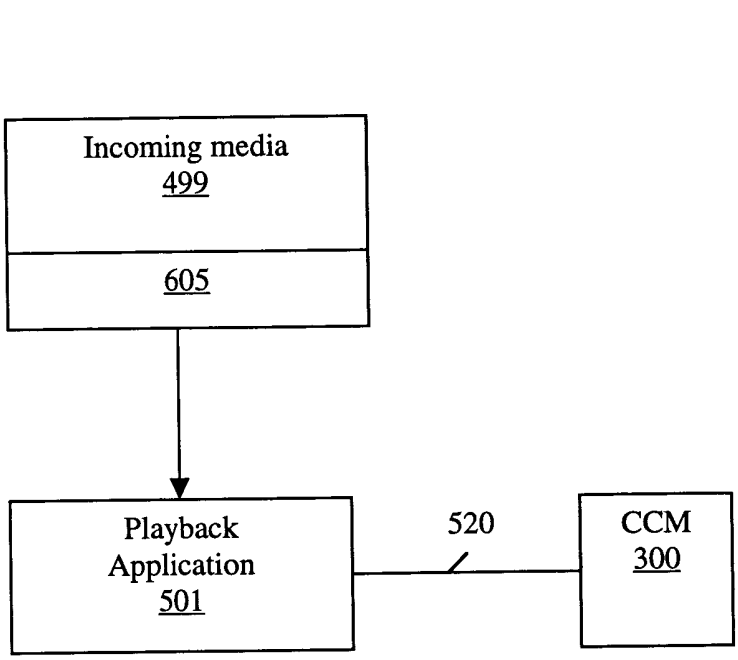
600
Incoming media
499
605
Playback
Application
501
520
CCM
300

FIGURE 6

700

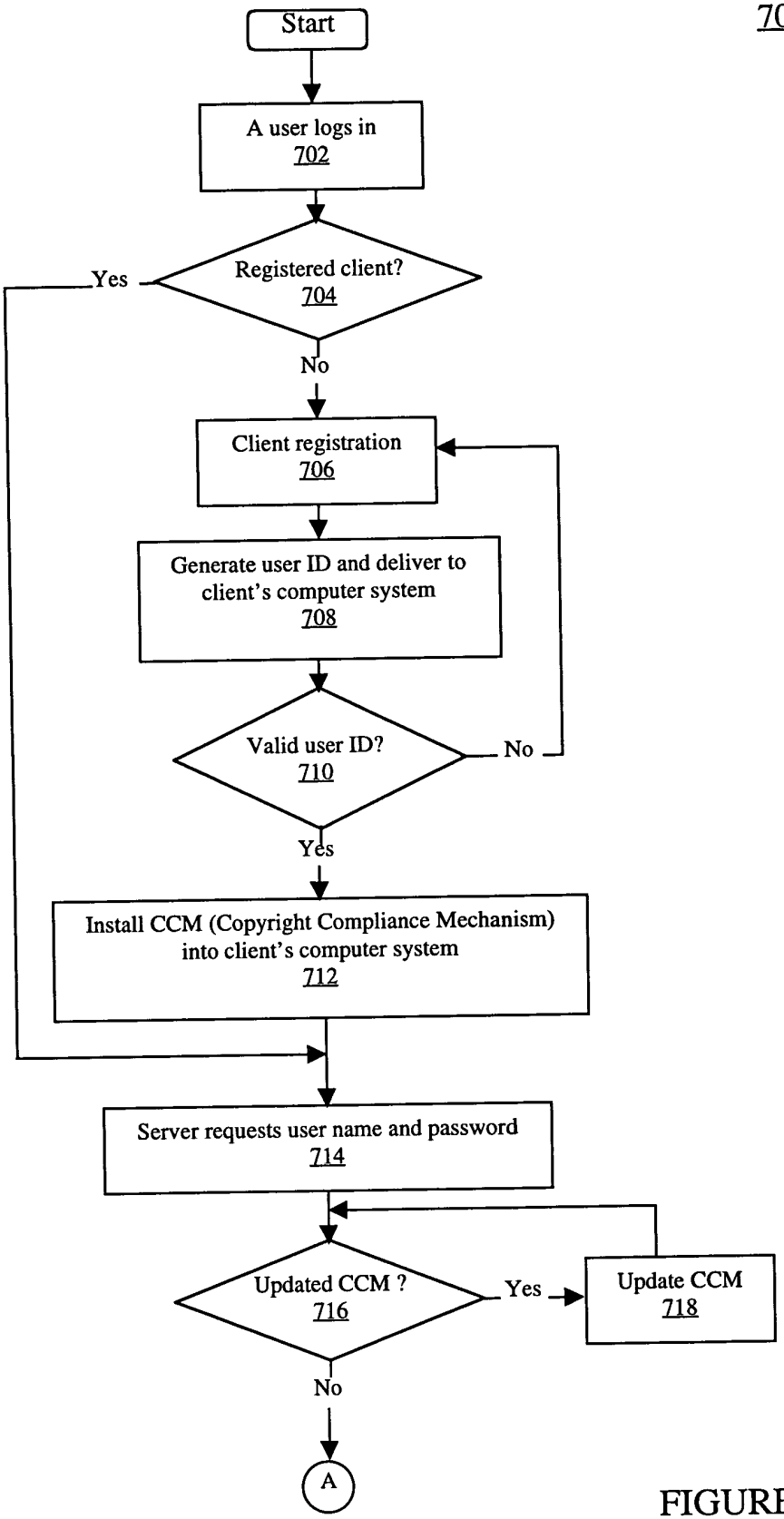

FIGURE 7A

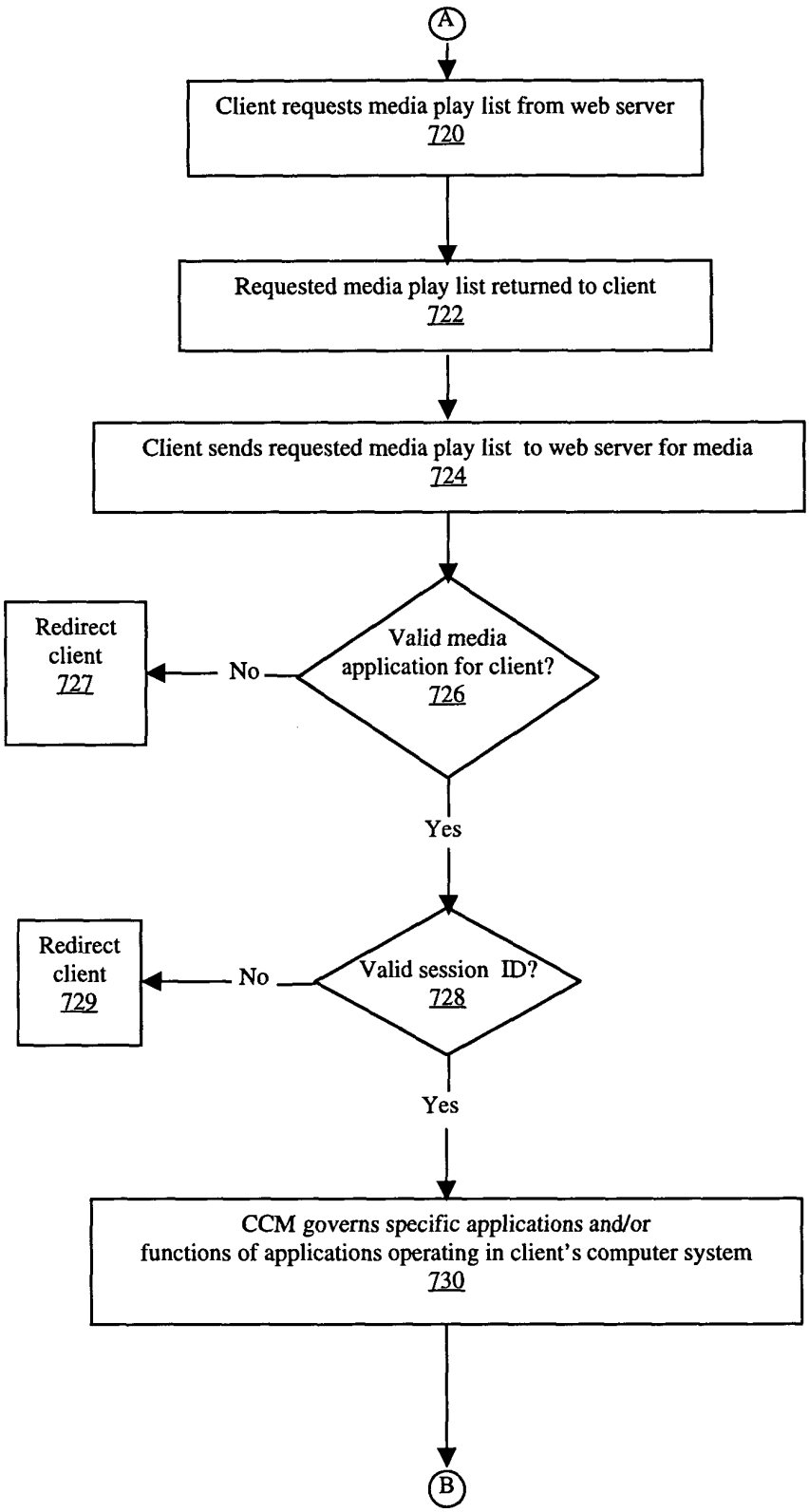
A
Client requests media play list from web server
720
Requested media play list returned to client
722
Client sends requested media play list to web server for media
724
Valid media application for client?
726
No
Redirect client
727
Yes
Valid session ID?
728
No
Redirect client
729
Yes
CCM governs specific applications and/or functions of applications operating in client's computer system
730
B

FIGURE 7B

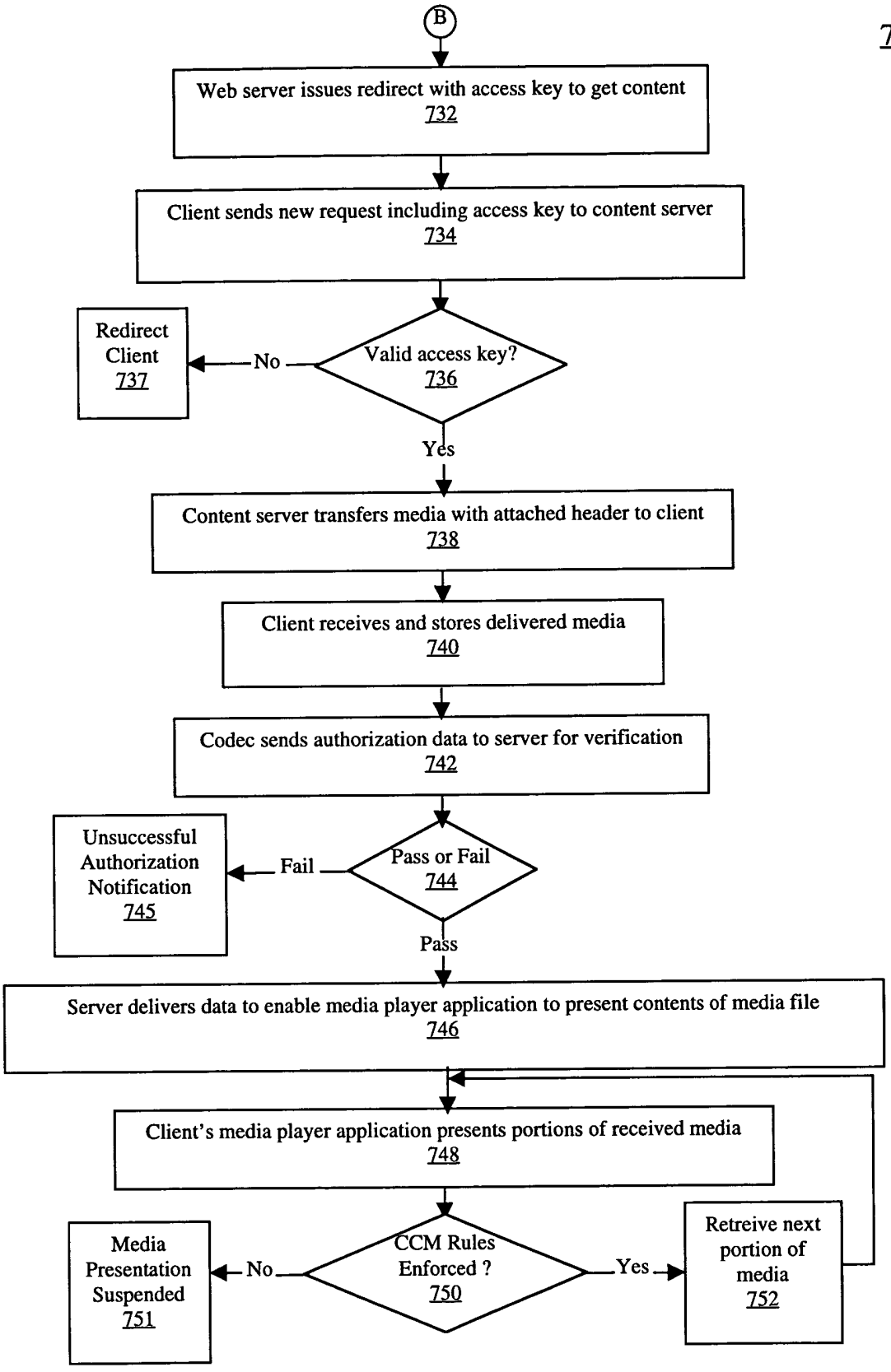
700
B
Web server issues redirect with access key to get content
732
Client sends new request including access key to content server
734
Valid access key?
736
No
Redirect Client
737
Yes
Content server transfers media with attached header to client
738
Client receives and stores delivered media
740
Codec sends authorization data to server for verification
742
Pass or Fail
744
Fail
Unsuccessful Authorization Notification
745
Pass
Server delivers data to enable media player application to present contents of media file
746
Client's media player application presents portions of received media
748
CCM Rules Enforced ?
750
No
Media Presentation Suspended
751
Yes
Retreive next portion of media
752

FIGURE 7C

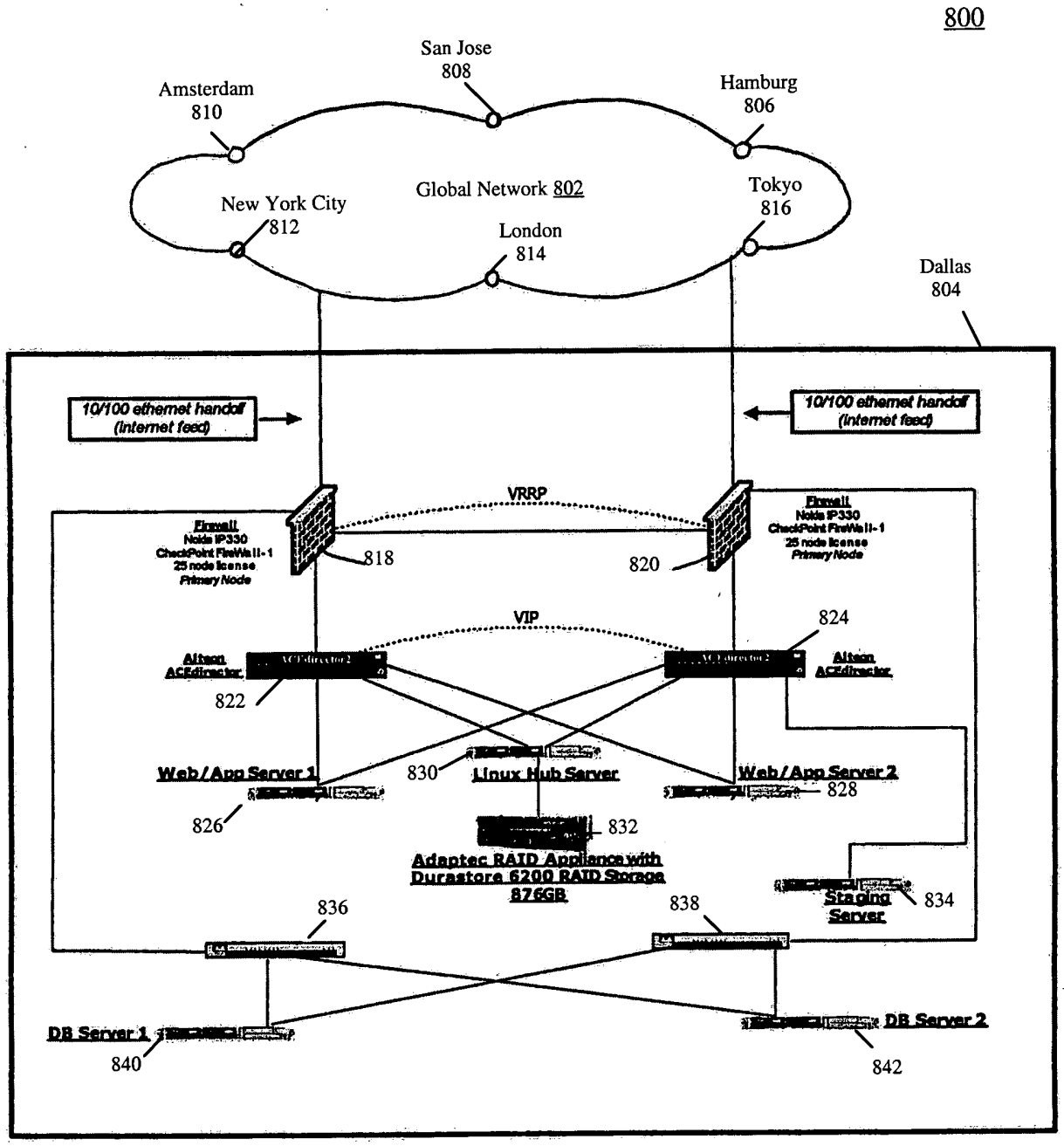
800
San Jose
808
Amsterdam
810
Hamburg
806
Global Network 802
New York City
812
Tokyo
816
London
814
Dallas
804
10/100 ethernet handoff (Internet feed)
10/100 ethernet handoff (Internet feed)
VRRP
Firewall
Nokia IP330
CheckPoint FireWall-1
25 node license
Primary Node
818
820
VIP
824
Alteon ACEdirector
822
Web/App Server 1
826
830
Linux Hub Server
Web/App Server 2
828
832
Adaptec RAID Appliance with Durastore 6200 RAID Storage 876GB
Staging Server
834
836
838
DB Server 1
840
DB Server 2
842

FIGURE 8

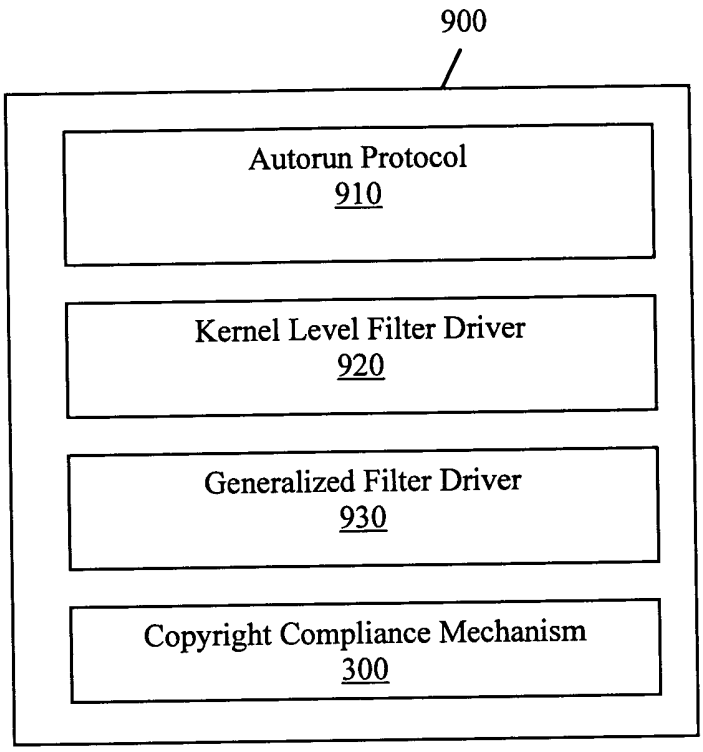
900
Autorun Protocol
910
Kernel Level Filter Driver
920
Generalized Filter Driver
930
Copyright Compliance Mechanism
300

FIGURE 9

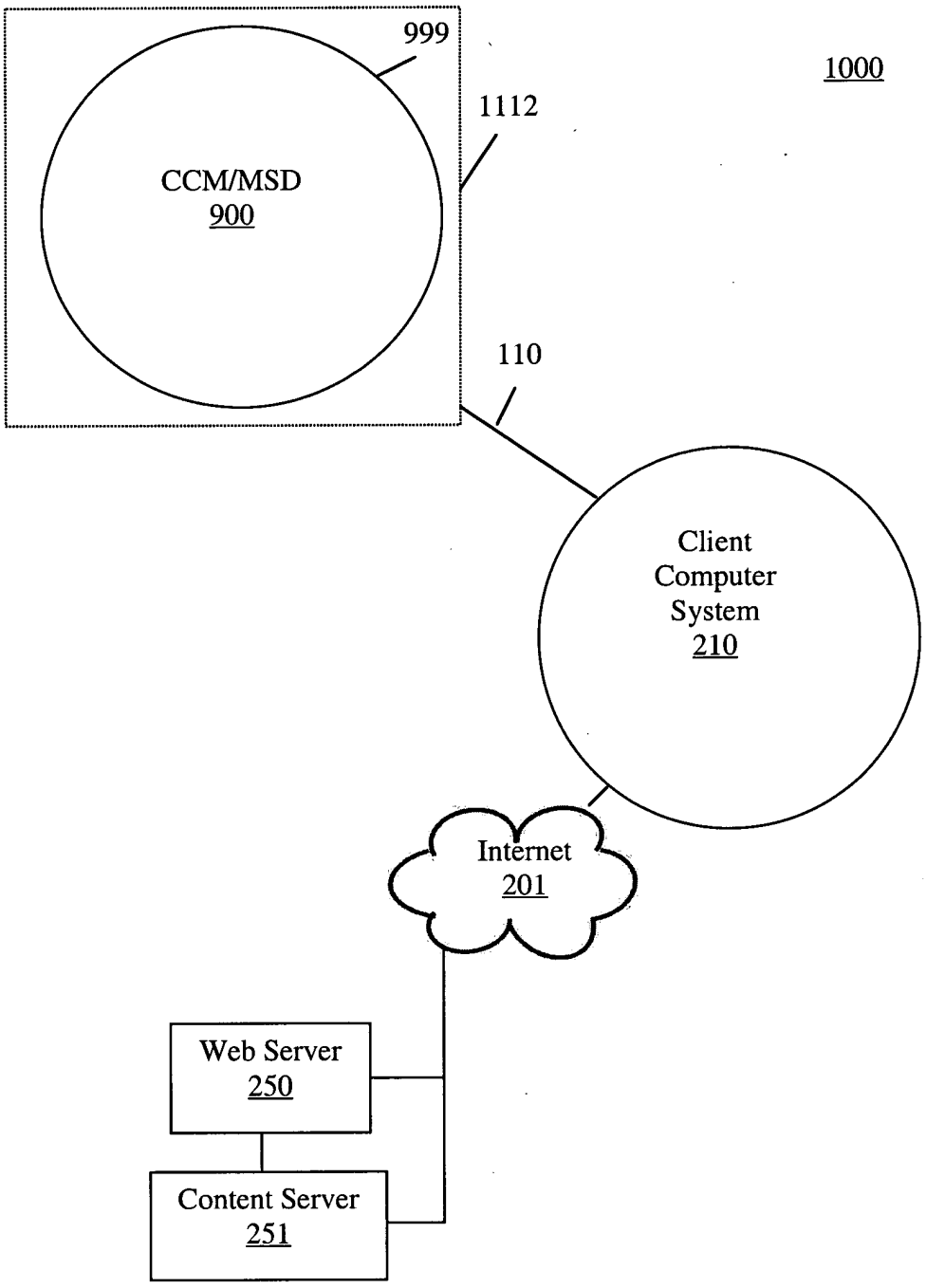
999
1000
1112
CCM/MSD
900
110
Client
Computer
System
210
Internet
201
Web Server
250
Content Server
251

FIGURE 10

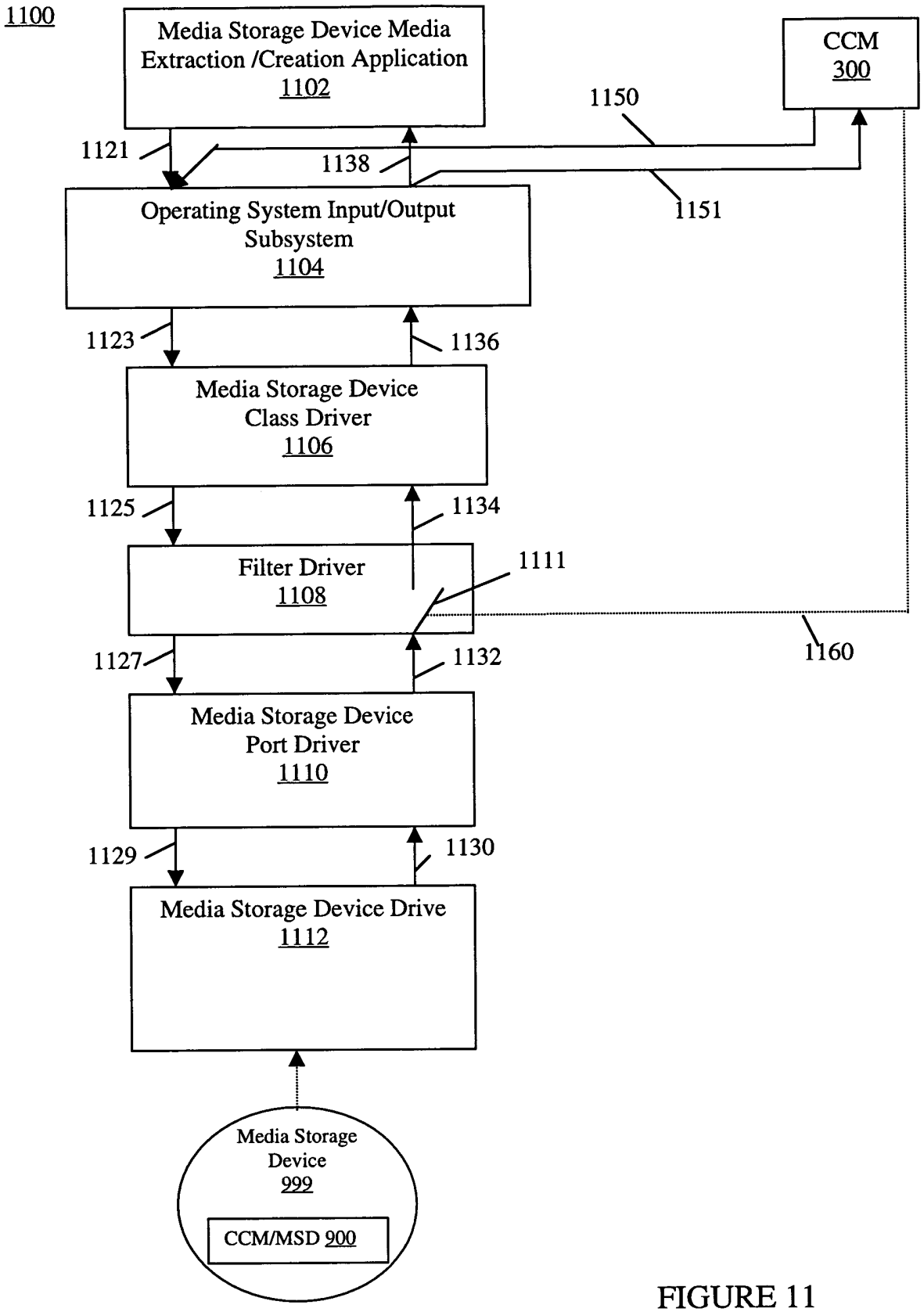
1100
Media Storage Device Media Extraction /Creation Application 1102
CCM 300
1150
1121
1138
1151
Operating System Input/Output Subsystem 1104
1123
1136
Media Storage Device Class Driver 1106
1125
1134
Filter Driver 1108
1111
1160
1127
1132
Media Storage Device Port Driver 1110
1129
1130
Media Storage Device Drive 1112
Media Storage Device 999
CCM/MSD 900

FIGURE 11

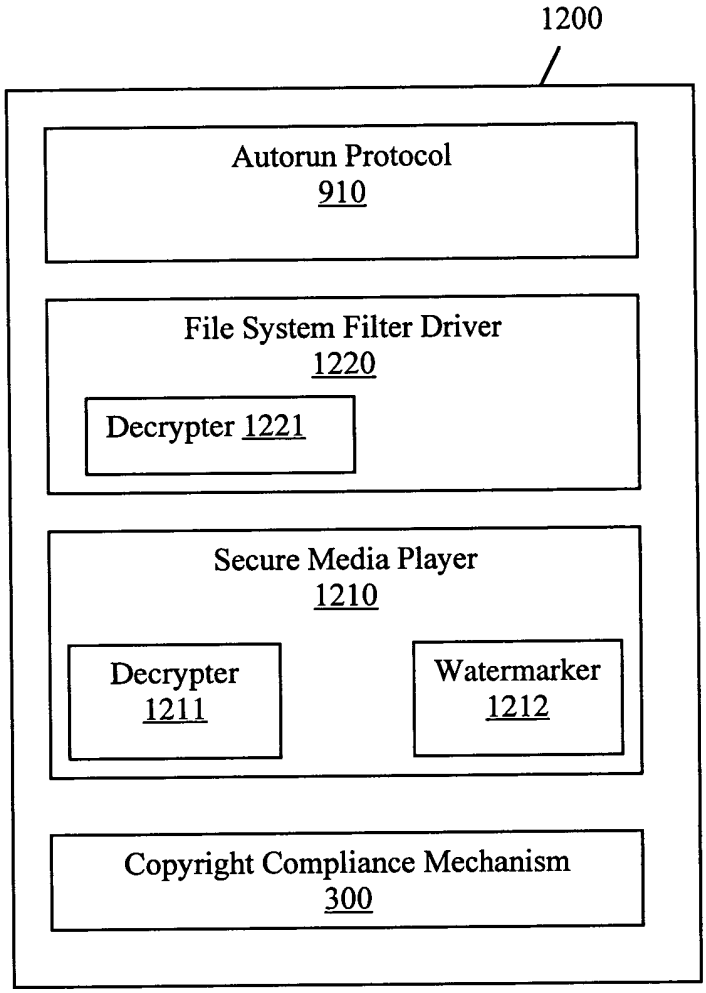
1200
Autorun Protocol
910
File System Filter Driver
1220
Decrypter 1221
Secure Media Player
1210
Decrypter
1211
Watermarker
1212
Copyright Compliance Mechanism
300

FIGURE 12

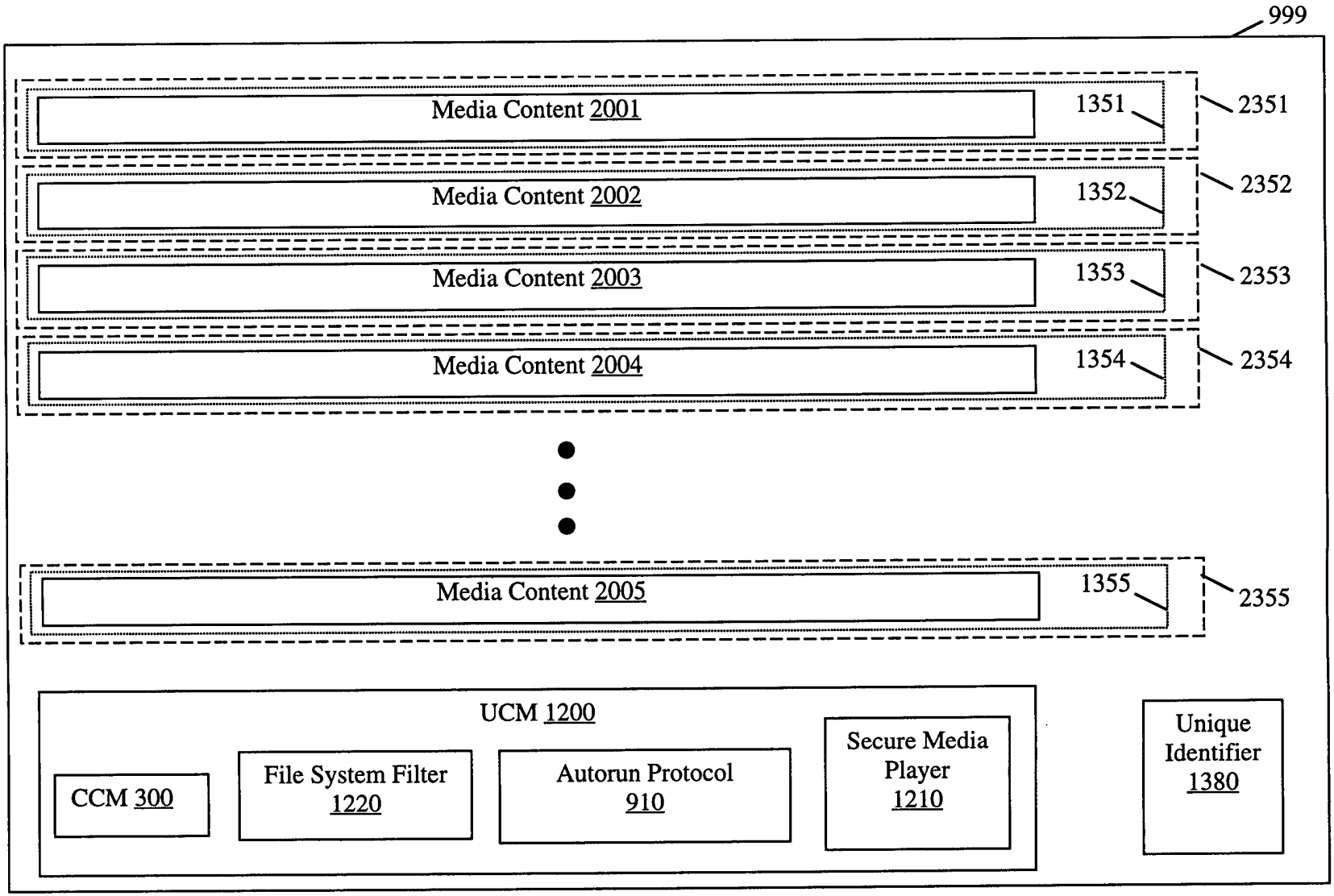
999
Media Content 2001
1351
2351
Media Content 2002
1352
2352
Media Content 2003
1353
2353
Media Content 2004
1354
2354
Media Content 2005
1355
2355
UCM 1200
CCM 300
File System Filter 1220
Autorun Protocol 910
Secure Media Player 1210
Unique Identifier 1380

FIGURE 13

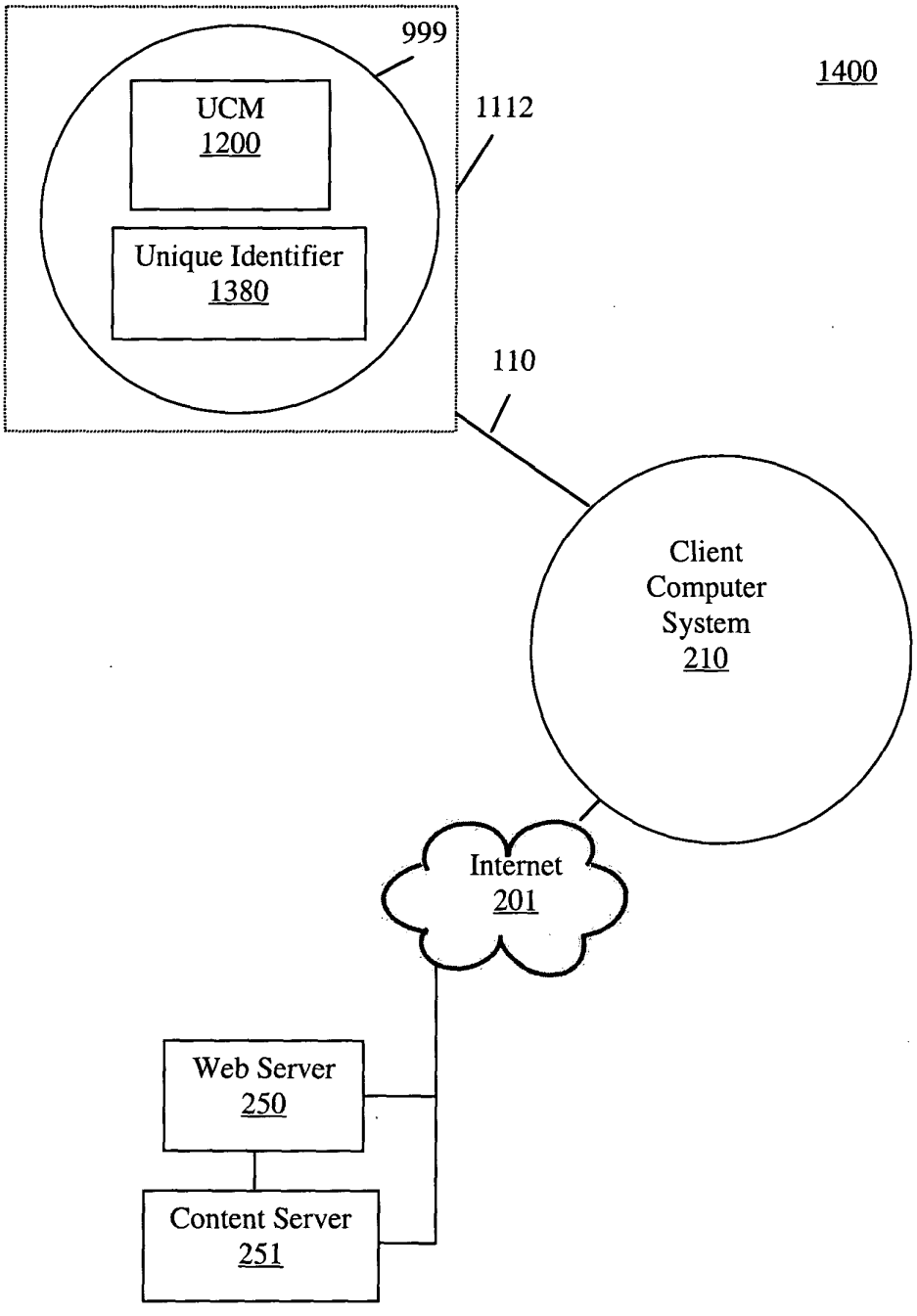
999
1400
UCM
1200
1112
Unique Identifier
1380
110
Client
Computer
System
210
Internet
201
Web Server
250
Content Server
251

FIGURE 14

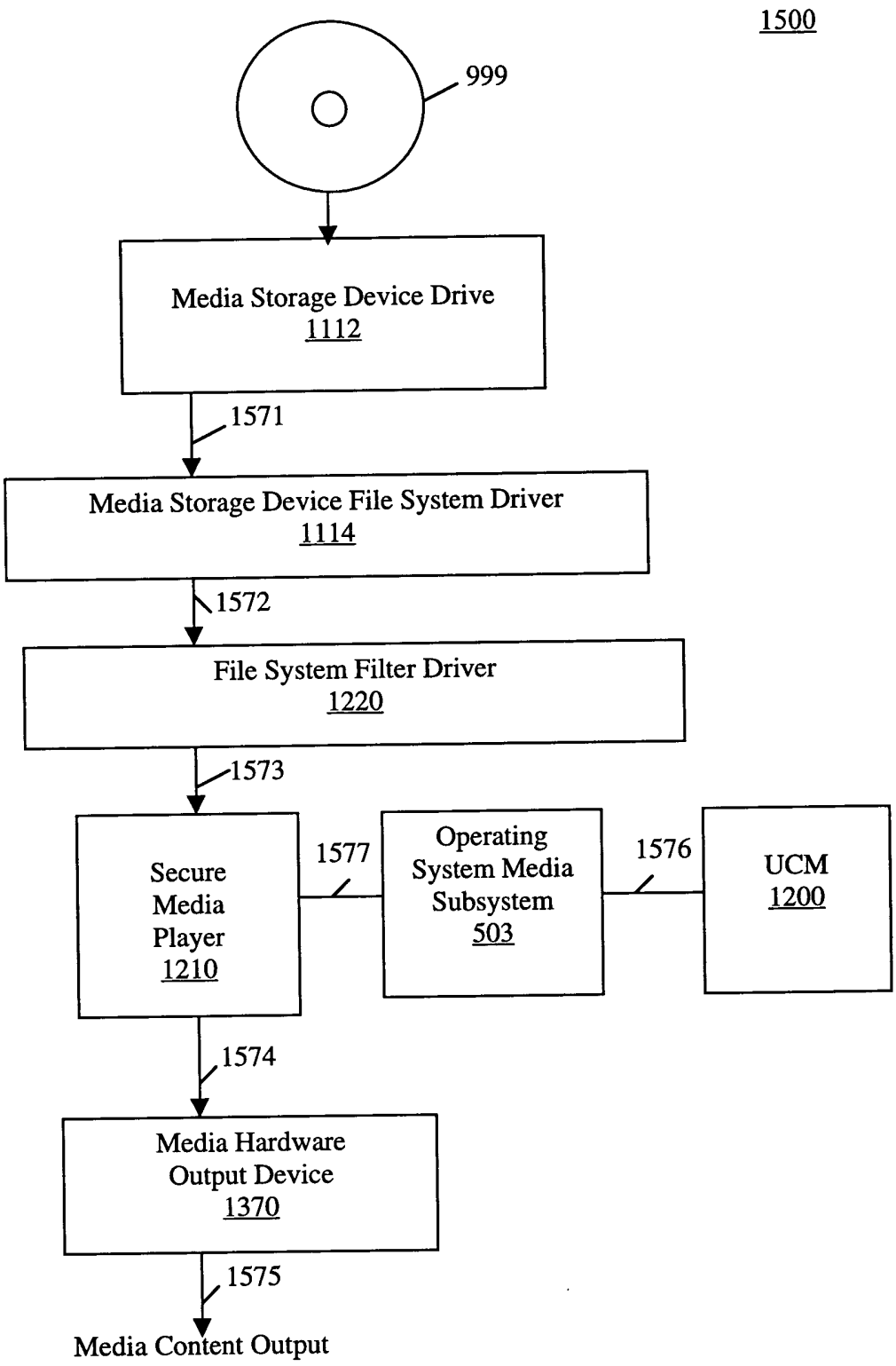
1500
999
Media Storage Device Drive
1112
1571
Media Storage Device File System Driver
1114
1572
File System Filter Driver
1220
1573
Secure
Media
Player
1210
1577
Operating
System Media
Subsystem
503
1576
UCM
1200
1574
Media Hardware
Output Device
1370
1575
Media Content Output

FIGURE 15

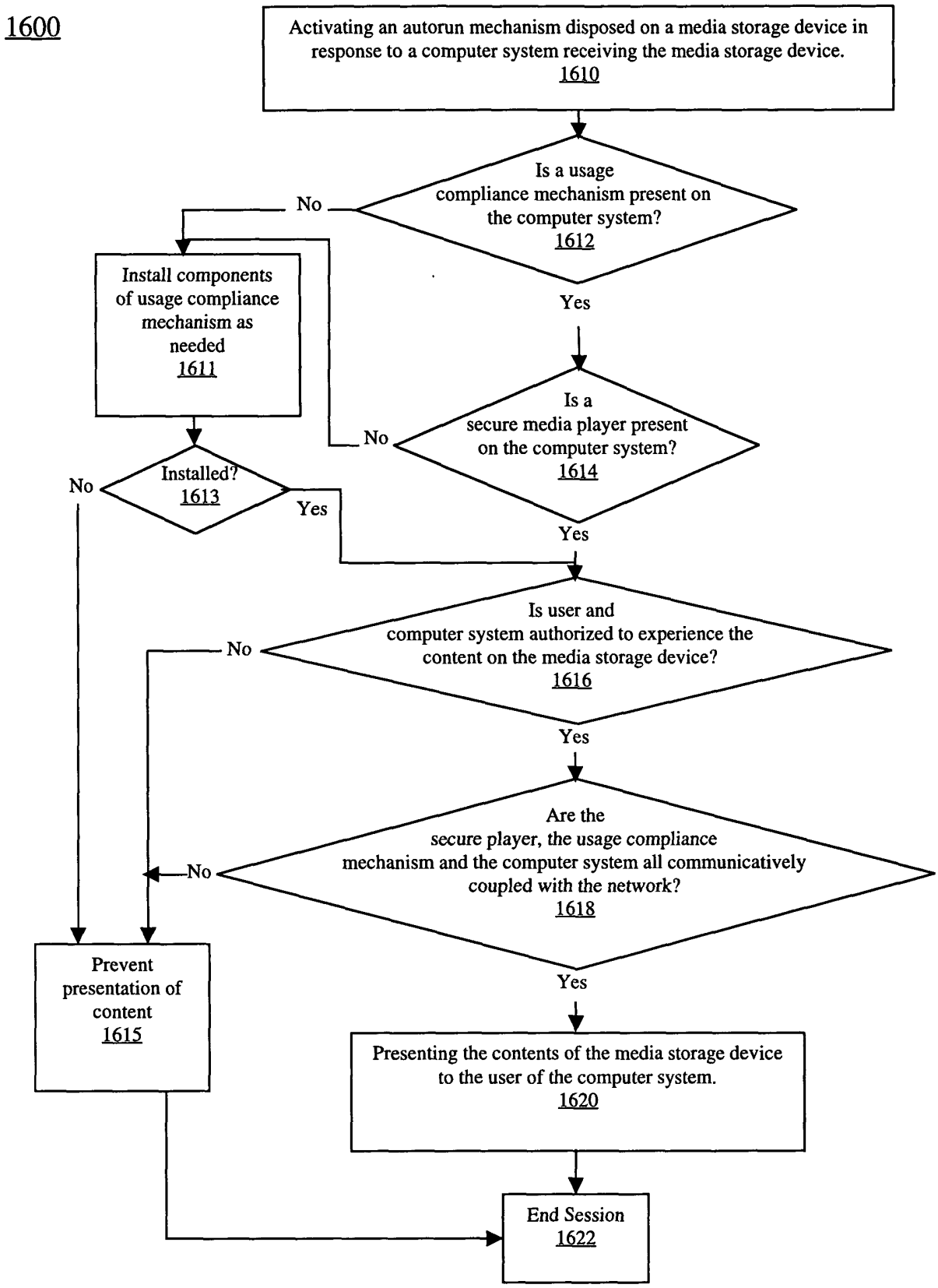
1600
Activating an autorun mechanism disposed on a media storage device in response to a computer system receiving the media storage device.
1610
Is a usage compliance mechanism present on the computer system?
1612
No
Yes
Install components of usage compliance mechanism as needed
1611
Is a secure media player present on the computer system?
1614
No
Yes
Installed?
1613
No
Yes
Is user and computer system authorized to experience the content on the media storage device?
1616
No
Yes
Are the secure player, the usage compliance mechanism and the computer system all communicatively coupled with the network?
1618
No
Yes
Prevent presentation of content
1615
Presenting the contents of the media storage device to the user of the computer system.
1620
End Session
1622

FIGURE 16

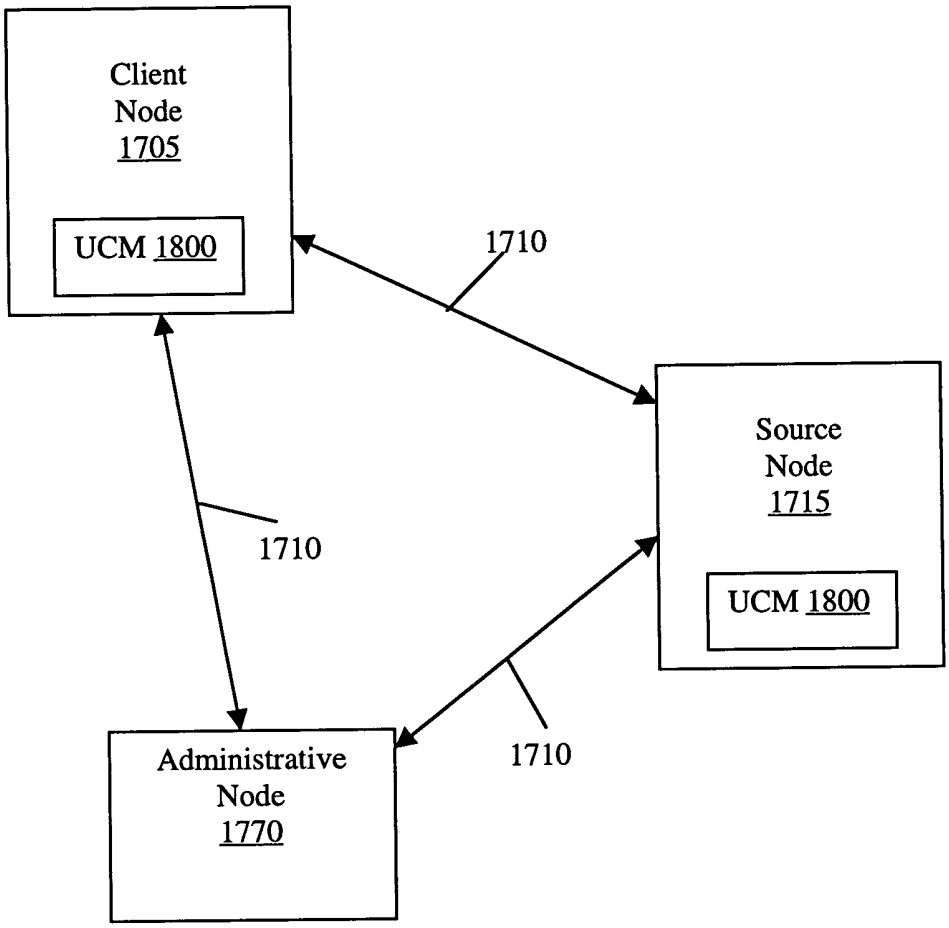
Client
Node
1705
UCM 1800
1710
Source
Node
1715
UCM 1800
1710
1710
Administrative
Node
1770

FIGURE 17

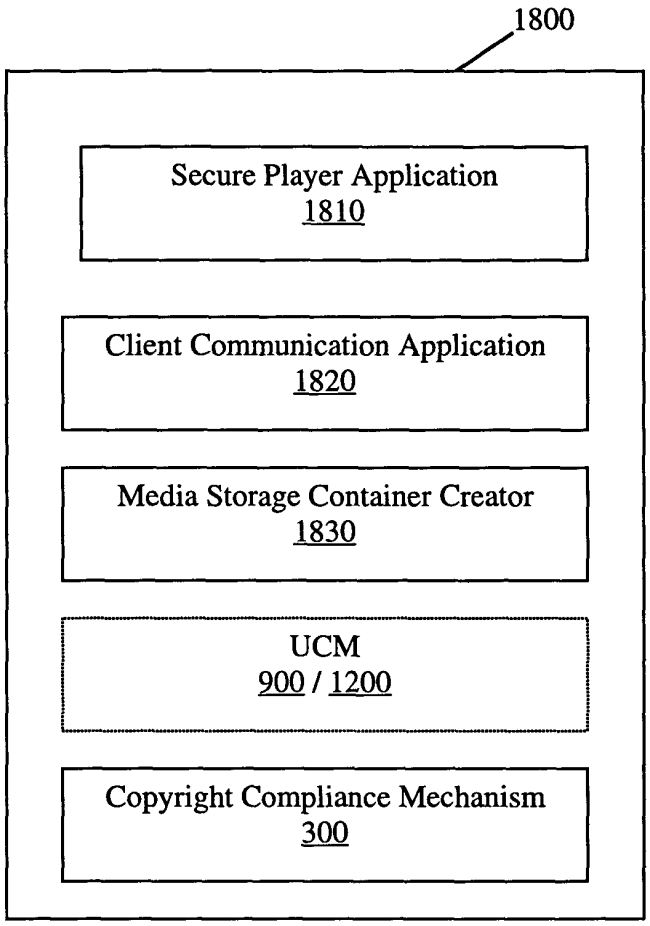
1800
Secure Player Application
1810
Client Communication Application
1820
Media Storage Container Creator
1830
UCM
900 / 1200
Copyright Compliance Mechanism
300

FIGURE 18

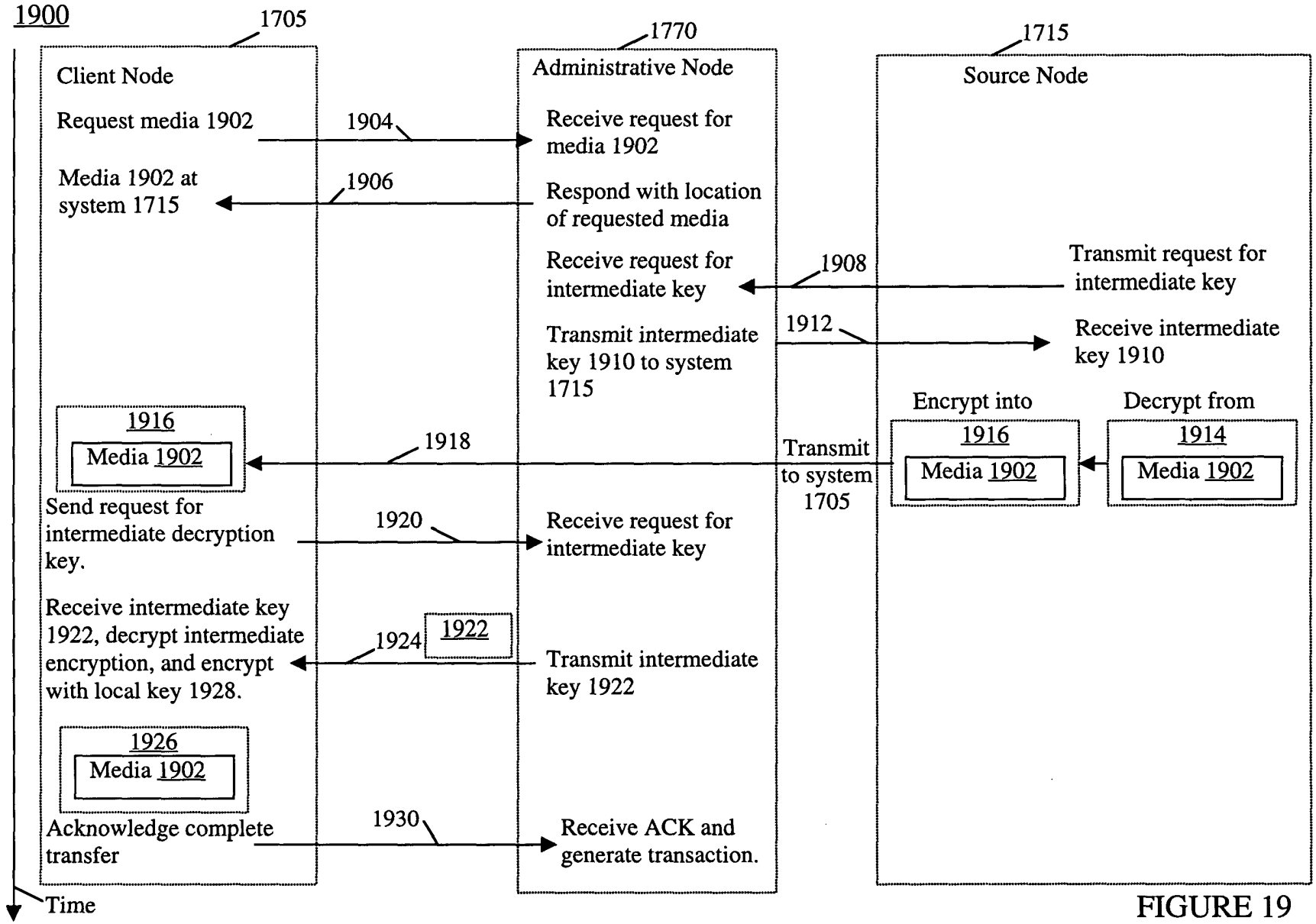
1900
1705
Client Node
Request media 1902
1904
Media 1902 at system 1715
1906
1770
Administrative Node
Receive request for media 1902
Respond with location of requested media
Receive request for intermediate key
1908
Transmit intermediate key 1910 to system 1715
1912
1715
Source Node
Transmit request for intermediate key
Receive intermediate key 1910
Encrypt into
Decrypt from
1916
Media 1902
1914
Media 1902
1918
Transmit to system 1705
Send request for intermediate decryption key.
1920
Receive request for intermediate key
Receive intermediate key 1922, decrypt intermediate encryption, and encrypt with local key 1928.
1924
1922
Transmit intermediate key 1922
1926
Media 1902
Acknowledge complete transfer
1930
Receive ACK and generate transaction.
Time

FIGURE 19